

KANSAS

FLOODPLAIN MANAGEMENT

TIPS

February 2014

How Likely is a Flood?

It makes sense to say that a house in a low spot next to a stream is more at risk to flooding than the house on a hill above it. Both buildings may be shown to be in a Zone A floodplain on a Flood Insurance Rate Map (FIRM). Depending on circumstances, such as foundation types, construction dates and market value, the two buildings could have similar flood insurance premiums.

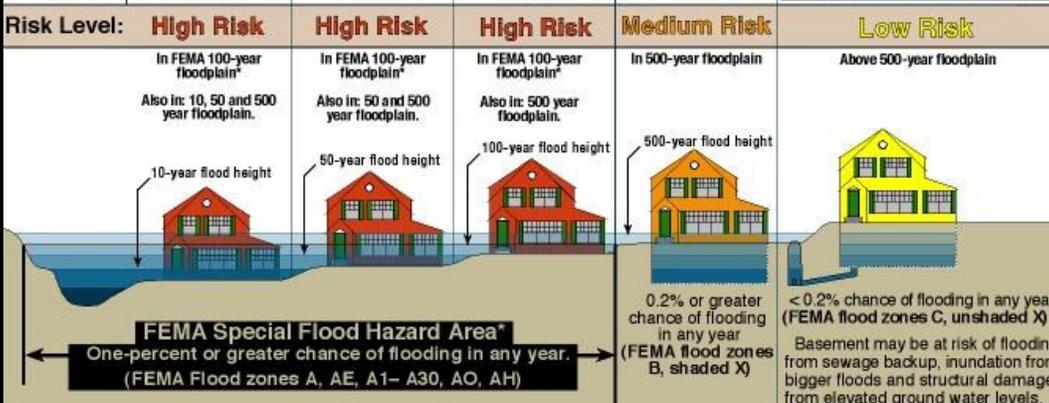
Graphic provided by State of Ohio shows likelihood of flooding.

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What is the Likelihood of Flooding?

Years in floodplain	Chance of at least one 10-year flood	Chance of at least one 50-year flood	Chance of at least one 100-year flood	Chance of at least one 500-year flood	The longer you occupy the floodplain, the greater your chance of being flooded.
1	10%	2%	1%	<1%	FEMA has not identified all areas that may be at risk of flooding. Between 20%–25% of flood insurance claims are from areas OUTSIDE of the FEMA Special Flood Hazard Area in supposedly "low risk" areas. ** Over a 30 year mortgage, there is a 26% chance of a 100-year flood.
2	19%	4%	2%	<1%	
3	27%	6%	3%	1%	
4	34%	8%	4%	1%	
5	41%	10%	5%	1%	
10	65%	18%	10%	2%	
15	79%	26%	14%	3%	
20	88%	33%	18%	4%	
25	93%	40%	22%	5%	
30	96%	45%	26%**	6%	



In the case of two very similar structures, you would expect the house in the low spot to pay a higher premium than the house at the higher elevation. The house in the low spot is clearly at a greater risk. However, the rate for houses built prior to a FIRM (Pre-FIRM) is a subsidized premium that levels the rates but does not account for the likelihood of flooding. Two similar Pre-FIRM buildings could pay the exact same flood insurance premiums, in spite of a clear elevation difference.

In contrast, actuarially rated premiums differ, in that the premiums are based on the risk. An elevation certificate is used to show the elevation of the lowest floor and evaluate the flood risk. A property on high ground in a special flood hazard area may benefit from having an elevation certificate done and paying an actuarial rate. There have been cases of property owners in that situation discovering, through the process of obtaining an elevation certificate, that their property would also qualify for a Letter of Map Amendment (LOMA). With an approved LOMA they saved even more money on the cost of insurance.

The Biggert Waters Reform Act of 2012 (BW12) is eliminating subsidized flood insurance and will eventually move all buildings to actuarial rating. Actuarial rating will benefit some properties.

Point Precipitation Estimating

The National Oceanic and Atmospheric Administration (NOAA) has published Atlas 14, Vol. 8 which provides new NOAA precipitation frequency estimates. NOAA Atlas 14 replaces Technical Paper 40, "Rainfall Frequency Atlas of the United States," U.S. Weather Bureau (TP 40). The TP 40 was written in 1961.

In general, the new precipitation estimates are higher, which will affect the hydrology used in stormwater and floodplain management. New precipitation estimates will effect floodplain mapping in areas without stream gages and could directly affect some levee certification and flood mitigation projects. This could be a small or large change and may be particularly important to projects that are currently in design or construction.

This information is available on NOAA's website at this address: <http://hdsc.nws.noaa.gov/hdsc/pfds>

Click on the State of Kansas for available data. The map has a scrolling and zooming feature on the left side. Move the red cross symbol to your location to load data.

Image is from NOAA Website

Now that you have the cross over your own community, scroll down to bottom of the page, where you will find a table. One side of the table is duration time or how long the storm lasted. The top of the table is an average recurrence interval given in years. This table will show you how much rain it would take in how much time to equal a certain event. You could work backwards from this table also. In the case that you had 4" of rain in 2 hours you could look for that duration and amount in the table and then see what level of event you just had at the top.

Going back to the top of the page, above the map, you will see a box with a drop down arrow called, "Time series type." Switching from partial duration to annual maximum will change the table. The table will now give you the probability that an event greater than or equal to the specified magnitude will occur in any given year. This is the annual chance of an event just as we describe a flood in terms of the annual chance of it happening. You can also change the table to a graph by selecting the tab just above the table called, "PF graphical."

Communities, especially communities with storm water requirements or current flood projects, will have to decide how they will implement new precipitation estimates.

NOAA's National Weather Service
Hydrometeorological Design Studies Center
Precipitation Frequency Data Server (PFDS)

Home Site Map News Organization

NOAA ATLAS 14 POINT PRECIPITATION FREQUENCY ESTIMATES: KS

DATA DESCRIPTION

Data type: Units: Time series type:

SELECT LOCATION

1. Manually:

a) Enter location (decimal degrees, use "-" for S and W): latitude: longitude:

b) Select location (click here for a list of stations used in frequency analysis for KS):

2. Use map:

a) Select location (move crosshair or double click)
b) Click on station icon (show stations on map)

LOCATION INFORMATION:
Name: Topeka, Kansas, US*
Latitude: 39.0818
Longitude: -95.6874
Elevation: 885 ft*

* source: Google Maps

Making Decisions for Substantial Improvement

A common situation that floodplain managers are faced with involves permitting for room additions or the remodeling of buildings in the floodplain. There are factors in deciding the level of flood proofing required for the activity. Those factors include cost of the improvement, age of the structure and the type of improvement.

Comparing cost of the improvement to the fair market value lets you know if this will be a substantial improvement. Knowing the age of the structure will tell you if the building was originally built prior to the first Flood Insurance Rate Map (FIRM) or not. The type of improvement could be a vertical addition, lateral addition or an interior remodel.

A useful decision guide is table 6-1a from the book, "Substantial Improvement/Substantial Damage Desk Reference, FEMA P-758/ May 2010". In the table the letters SI stand for substantial improvement and SD stands for substantial damage. Begin by finding the type of work being done in the first column. Then read across to the second column if the original structure was built prior to the FIRM, also called Pre-FIRM. Go to the third column for a building constructed after date of the FIRM. You'll find the level of compliance explained under the appropriate column.

In the case that it says compliance is not required there does not need to be an elevation or flood proofing certificate. A local floodplain development permit is still required. Use the permit form to document cost of the improvement as proof it is not a substantial improvement.

Floodplain managers can read the entire Substantial Improvement/Substantial Damage Desk Reference on line at the Federal Emergency Management (FEMA) website. You may also order a copy by calling 1-800-480-2520.

Table 6-1a. Compliance Matrix (A Zones)

Types of Work	Building is Pre-FIRM	Building is Post-FIRM
Rehabilitation (renovate or remodel), <u>not SI</u>	Compliance not required	Work shall comply and shall not be allowed to make the building non-compliant with any aspect of the building that was required for compliance
Rehabilitation (renovate or remodel), SI	Building required to comply	Work shall comply and shall not be allowed to make the building non-compliant with any aspect of the building that was required for compliance (see Note below table)
Lateral addition and Rehabilitation, SI	Addition required to comply; building required to comply	Addition required to comply; building required to comply (see Note below table)
Lateral addition, <u>not SI</u>	Addition not required to comply	Addition required to be elevated to at least the elevation of the existing lowest floor
Lateral addition, SI, <u>not structurally connected</u>	Addition required to comply; building not required to comply	Addition required to comply
Lateral addition, SI, structurally connected	Addition required to comply; building required to comply	Addition required to comply; building required to comply (see Note below table)
Vertical addition above building, <u>not SI</u>	Compliance not required	Work shall comply and shall not be allowed to make the building non-compliant with any aspect of the building that was required for compliance
Vertical addition above building, SI	Building required to comply	Work shall comply and shall not be allowed to make the building non-compliant with any aspect of the building that was required for compliance (see Note below table)
Repair foundation, <u>not SI</u>	Compliance not required	Repairs shall comply and shall not be allowed to make the building non-compliant with any aspect of the building that was required for compliance
Repair foundation, SI	Building required to comply	Building required to comply (see Note below table)
Replace/extend foundation, SI (including "elevate-in-place")	Building required to comply	Building required to comply (see Note below table)
Repair damage, SD	Building required to comply	Work shall comply and shall not be allowed to make the building non-compliant with any aspect of the building that was required for compliance (see Note below table)
Reconstruct new building on existing or new foundation, SI	Reconstructed building required to comply	Reconstructed building required to comply (see Note below table)

Note: If a map revision has resulted in a higher BFE, a post-FIRM building must comply based on the new BFE.

Training Opportunities

KDA-DWR will host the following training sessions throughout Kansas. If you are interested in any of the no-cost training opportunities, please contact Tom Morey at 785-296-5440 or Steve Samuelson at 785-296-4622. A training registration form is in this newsletter.

Post Flood Responsibilities

This free class is intended for community officials responsible for administering floodplain management regulations. The course focuses on what to do during and after a disaster event. Topics include substantial damage, permitting, Increased Cost of Compliance and violations. Approved 3.5 hours toward CFM. Limited to 20 participants.

•Holton - Apr. 23, 2014 8:30 a.m.-12:30 p.m.

Elevation Certificates and Letters Of Map Amendment

This free class is designed for community officials responsible for administering floodplain management as well as surveyors and engineers who complete Letters Of Map Amendment (LOMA) and Elevation Certificate forms. The course will focus on accurate completion of Federal Emergency Management Agency (FEMA) technical forms, building diagrams and base flood elevation. Approved 3.5 hours toward CFM. Limited to 20 participants.

•Hutchinson - Apr. 8, 2014 8:30 a.m.-12:30 p.m.

Basics of the National Flood Insurance Program

This class is for officials responsible for administering their local floodplain management ordinance. The focus is on the National Flood Insurance Program (NFIP) and concepts of floodplain management, maps and studies, ordinance administration, and the relationship between floodplain management and flood insurance. Approved 3.5 hours toward CFM. Limited to 20 participants.

•Junction City Apr. 10, 2014 8:30 a.m.-12:30 p.m.

Find more information about floodplain management from Kansas Department of Agriculture
Division of Water Resources on line at:
<http://agriculture.ks.gov/divisions-programs/dwr/floodplain>

Email saves money on postage. The electronic newsletter also has links and the photos are in color. If you are getting this newsletter by postal mail and would prefer email please contact Steve Samuelson at steve.samuelson@kda.ks.gov.

Mark your calendar. The Kansas Association for Floodplain Management 2014 conference will be September 3 and 4 in Wichita. More information will be posted at the website: www.KAFM.org. Registration will be done through a link on the website. If you have questions about registration please contact Don Slone, Chairman, at 913-667-1708.

Kansas Department of Agriculture
Division of Water Resources
Floodplain Program
Training Registration Form

Name _____

Title _____

Organization _____

Address _____

City _____ State _____ Zip _____

Telephone _____ Fax _____

E-mail _____

Name, date and location of training you will attend _____

*Please share this invitation with anyone else who could benefit from the training.

**Classroom locations will be sent to registered participants one week before the training.

Please mail or fax your registration to:

KANSAS DEPARTMENT OF AGRICULTURE
FLOODPLAIN MANAGEMENT PROGRAM
109 SW 9th STREET, 2nd FLOOR
TOPEKA, KS 66612-1283
Fax to: 785-296-1176

If you have questions about training, please contact Steve Samuelson by email at steve.samuelson@kda.ks.gov or by phone 785-296-4622, or contact Tom Morey at tom.morey@kda.ks.gov and 785-296-5440.

Please help us keep our records current. If the name that appears on this newsletter is for an individual no longer with your organization, please call 785-296-4622, or email steve.samuelson@kda.ks.gov to report the change.

046-17
Kansas Department of Agriculture
Division of Water Resources
Floodplain Management
109 SW 9th St 2nd Floor
Topeka, KS 66612-1283

ASFPM 2014 National Conference in Seattle

The 2014 Association of State Floodplain Managers National Conference will be June 1-6 2014 in Seattle, Washington. This conference is an excellent opportunity for floodplain managers to receive training on mapping technologies, regulations, permitting, outreach and best practices. It is estimated the conference will be attended by more than 1,000 floodplain management professionals. This conference is great chance to meet people for networking and to learn the latest news in floodplain management.

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